8 August 1966

WIDE PRINT STRAIGHTENER

1. PROBLEM.

To develop a straightener for the large photographic prints required by NPIC for briefing purposes.

2. FACTS BEARING ON THE PROBLEM.

a. Large prints are used by NPIC to provide briefings on mission results.

b. All newly processed photographic prints have a decided curl due to the differential drying of the emulsion and the paper base, making them difficult to handle unless flattened by a print straightener.

c. Commercially available print straighteners will not accept photographic prints more than 16 inches wide.

d. Since briefing prints must be considerably larger in size than 16 inches for effective presentation, it is necessary to employ a time-consuming process to mount them on a stable backing.

3. DISCUSSION.

a. Current Procedure - Large photographic prints are presently delivered from the photo laboratory in a curled condition, making it necessary for the user to mount them on a hardboard base before they are used.

b. Origin of Concept - By a memorandum dated 7 July 1965, the Production Services Division, NPIC, stated a requirement for two print straighteners capable of handling prints 26 to 30 inches in width and requested the Plans and Development Staff to investigate the feasibility of developing a wide print straightener. The subsequent investigation considered commercially available equipment, modifications to commercial equipment, and new designs. It was determined that the commercial equipment could not be modified to meet the requirement and a new design was necessary to handle the large size prints.

c. Proposed Program - This project is for the development of a prototype print straightener capable of handling black and white photographic prints up to 30 inches wide. Dependent upon the test and evaluation of the prototype, an improved version is also planned. Operational and maintenance literature as well as specifications and drawings will be required.

d. Selection of Contractor - Development Objectives were prepared and forwarded to the Office of Logistics in November 1965 for solicitation of proposals. By January 1966 no formal proposals had resulted from the solicitation. Two qualified local facilities were then formally contacted. Resultant proposals from both companies [redacted] were evaluated. [redacted] submission was extremely brief and lacking in essential details. Efforts to obtain more detail resulted in verbal commitments but to date a revised proposal has not been received. It is felt that, although [redacted] is qualified and fully aware of the requirements, it has applied very little effort and time to the specifics in the proposal, and intends to work out the details after being awarded the contract. Thus, in spite of the fact that [redacted] was the low bidder, further consideration of the [redacted] proposal is felt unwarranted.

The [redacted] proposal, on the other hand, is well prepared, and indicates that considerable time and effort was expended in preparation. All details are covered and the design parameters of the several component parts are technically sound. The selection of materials for the various moving parts, tables, sink, etc., are the preferred types for this application. The approach to the complete operation indicates awareness of the requirements. A plant visit was made to inspect the company's facilities and to further discuss the development objectives. The results of this visit and the thoroughness of the proposal indicate that the contract award to [redacted] will result in superior equipment.

e. Coordination - The selection of the [redacted] proposal has been coordinated and concurred in by the Production Services Division, NPIC, and by the Plans and Development Staff, NPIC. Since this is a specific requirement of an NPIC operational component, and the deliverable item is a prototype, community-wide coordination has not been effected.

f. Alternatives - Alternatives to the solution of curled briefing prints are: (1) Continuation of the present method of requiring hard-back mounting of prints; (2) Acceptance of the lower cost proposal and probable delivery of an inferior piece of equipment.

4. CONCLUSIONS.

The [redacted] proposal evidences complete understanding of the task and technical competence to achieve all of the requirements. The company has the required personnel and facilities, and the funding as quoted seems reasonable and justifiable. There is every reason to expect a satisfactory item within the five-month schedule and at the cost quoted.

5. RECOMMENDATIONS.

It is recommended that the proposal of the [redacted], be accepted for the development of this equip-

ment and that a fixed-price contract for [redacted] be negotiated on the basis of the Development Objectives and Librascope's proposal. 25X

6. REFERENCES & ATTACHMENTS.

TAB A - R&D Catalog Form

TAB B - Development Objectives

TAB C - Program Phasing

Attachment - Proposal

SECRET
(When Filled In)

TAB A

R & D CATALOG FORM

DATE: 31 August 1966

1. PROJECT TITLE/CODE NAME
Wide Print Straightener

2. SHORT PROJECT DESCRIPTION
Development of a photo print straightener for removing the curl from freshly processed photographic prints.

X1 3.

5. CLASS OF CONTRACTOR
Manufacturer

6. TYPE OF CONTRACT

7. FUNDS
FY 19 66 $ None
X1 FY 19 67
FY 19 68 $ None

8. REQUISITION NO.

9. BUDGET PROJECT NO.
NP-R-9-10097

10. EFFECTIVE CONTRACT DATE (Begin - end)
30 November 66 - 30 April 67

11. SECURITY CLASS.
A.A. - Confidential
T. - Unclassified
W. - Unclassified

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION
X1 DDI/NPIC/P&DS/

13. REQUIREMENT/AUTHORITY
PSD/LB has a requirement to straighten 30 inch wide photographic prints. Equipment capable of meeting this requirement is not available.

14. TYPE OF WORK TO BE DONE
Engineering Development

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Reproduction Techniques & Materials	Reproduction
	Processors

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
One prototype print straightener, wide print.

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION
There is no known equipment either under development or available commercially which will satisfy this requirement.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required)
Briefing prints are frequently made in sizes as large as 30 inches in width. This item will be used to remove curl from these prints, thus permitting their use without mounting. Deliverable items will include the prototype print straightener, monthly and final reports and such specifications and drawings as may be required for subsequent procurement of the item.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

8 November 1965

DEVELOPMENT OBJECTIVE

Super Wide Print Straightener

1. INTRODUCTION. This document outlines the technical requirements and physical specifications for development of a wide paper print straightener.

1.1. Background - Photographic papers are emulsion coated on one side only; this results in differential drying of the two sides of the paper causing contraction of the emulsion and a decided curl toward the emulsion side.

Although presently available commercial print straighteners will not accommodate prints larger than 14" in width, there does not appear to be any technical reason to prevent their being made to accommodate larger print sizes.

1.2. Concept - Briefing prints are frequently made in sizes larger than 14" in width. It is intended that this print straightener will be used to remove the curl from paper prints, thus permitting their use without the necessity of mounting. It is further intended that the equipment be of such weight and size that it may be readily moved from one location to another. It is assumed the design of the equipment will require electricity for its operation and will make use of liquids for generation of moisture of vapor. Any solution used must be non-toxic to the user and non-injurious to the emulsion or equipment. Government representatives will review submitted proposals and selection will be made on the basic of design ingenuity, simplicity, time schedule, and cost.

1.3. Scope - This project is for the development, design, fabrication, test and evaluation of a prototype model of a print straightener to accept paper prints up to 30 inches in width. Literature requirements will include monthly reports, a final report of the development, and such specification and drawings as may be required to permit subsequent procurement of the equipment.

1.4. Philosophy - Several methods presently are being used to accomplish print straightening; one is to stretch the emulsion by passing the print over a series of rollers with the paper base next to the roller. This method sometimes damages the emulsion. The more acceptable method makes use of a combination of rollers and the application of moisture. The moisture technique is acceptable; however, any method may be used so long as it meets other requirements stated herein and does not damage the print or the emulsion, or have any adverse effects on dry mounting.

2. REQUIREMENTS.

2.1. Physical -

2.1.1. The print straightener shall consist of a feed table, belts, or rollers as may be necessary to transport the prints through the equipment and a basket or container to receive the finished prints.

2.1.2. If water moisture or other liquids are required, the equipment shall include a drain valve in the tank to remove the liquid.

2.1.3. If heat is required for the generation of moisture or vapor, electric heating elements shall be contained in the body of the tank or shall be a securely attached immersion type heater. Either method shall include thermostatic control. A control will also be provided to automatically shut off the heating element when a predetermined solution level in the tank has been reached.

2.1.4. The equipment shall be no more than 34 inches in width and the length, including the feed platform and the take up receptacle, shall be held to a minimum consistent with other requirements. The equipment is intended to be table mounted. However, if the total weight exceeds 100 pounds it shall be provided with stand and casters.

2.1.5. Electrical - The equipment shall be designed to operate on 110-120 volt 60 cycle single phase AC, with a maximum power load not to exceed 15 amps.

2.2. Operational -

2.2.1. This print straightener shall be capable of accepting either single or double weight black and white paper prints of the commercial variety (such as Kodabromide, enlarging; or AZO, contact;) in any width from 70mm to 30 inches at continuously variable speeds. The equipment shall be as light and compact as is consistent with other requirements.

2.2.2. The design of this equipment shall be such that it may be operated by one person. It shall not require any attention except when prints are actually being fed through the straightener.

TAB C

PROJECT PHASING

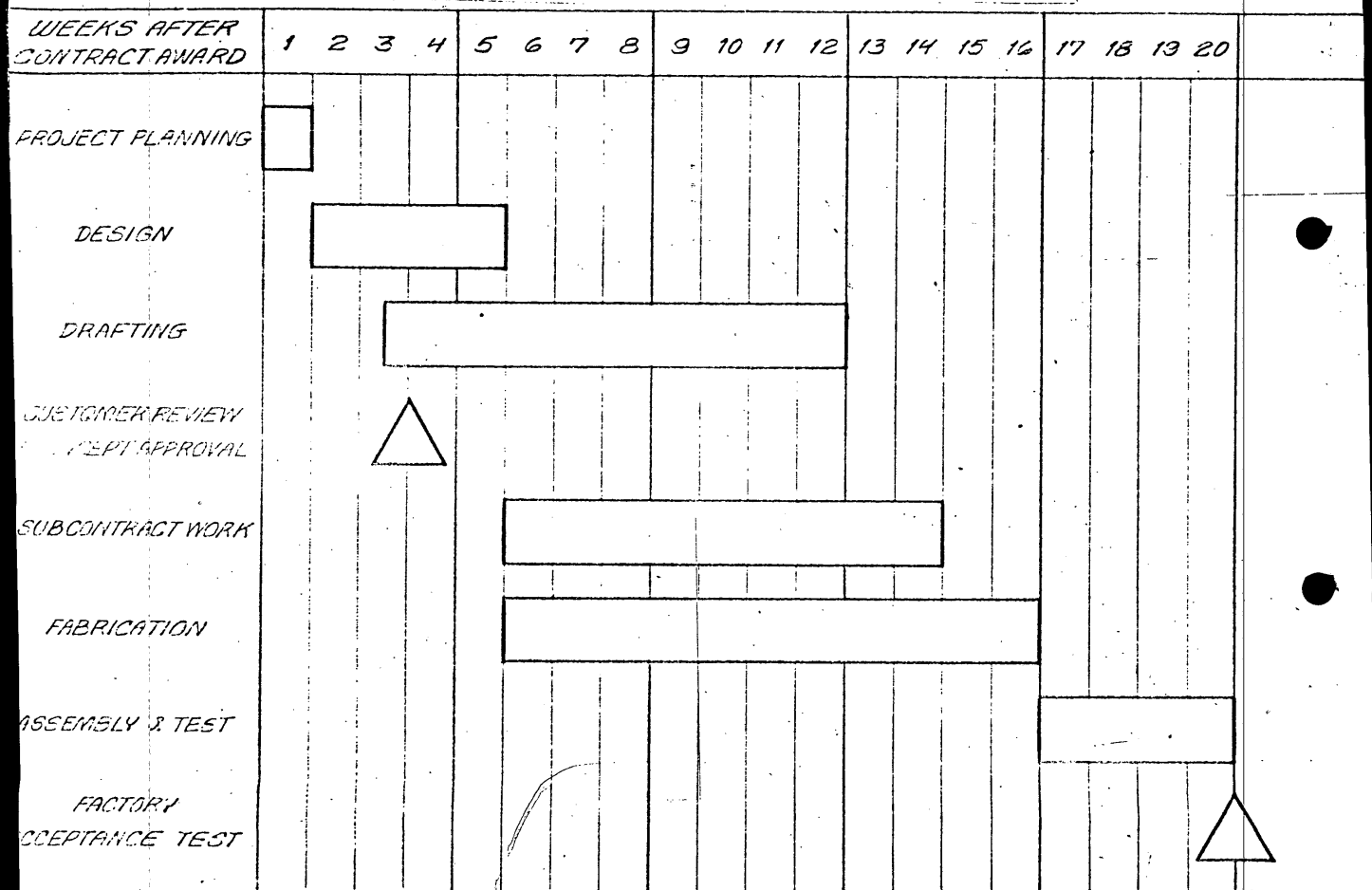

TABLE No. 1